P8SG-xxxxE/Z(Hxx)LF

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PM5-SERIES Rev.11-2008

- ✓ 1.5 Watt
- ✓ Regulated
- ✓ **DIP24 Plastic** Case
- ✓ **1 - 6 kV** DC I/O Isolation
- ✓ **Single** and **Dual** Output
- ✓ Continuous Short Circuit Prot.
- ✓ Full SMD Technology

The PM5 series P8SG-xxxxE/Z(Hxx)LF is a family of cost effective 1.5 W single and dual output DC/DC converters. These converters are encapsulated in an ultra miniature DIP24 case. High performance features: 1000VDC, optional up to 6000VDC input/output isolation, high efficiency operation, output voltage accuracy of ±2% maximum, input range of ±10% tolerance and low output ripple and noise.

All specifications typical at Ta=25℃, nominal input voltage and full load unless otherwise specified

Input Specifications	
Voltage Range	± 10%
Input Filter	Pi Type
Input Reflected Ripple Current[1]	35 mA pk-pk
Output Specifications	
Voltage Accuracy	± 2%
Short Circuit Protection	Indefinite (automatic recovery)
Line Regulation	± 0.5%
Load Regulation (0% - 100%)	± 0.5% (3.3Vout Models: ± 1.5%)
Ripple and Noise (20Mhz bandwidth)	75 mV pk-pk
Temperature Coefficient	± 0.02% / ℃
General Specifications	
Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1000 VDC (up to 6000 VDC optional)*
I/O Isolation Capacity	60 pF, typ.
I/O Isolation Resistance	1000 M Ohm
Switching Frequency (typical)	40 kHz (Single out); 350 kHz (Dual out)
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 3.072 Mhrs
Physical Specifications	
Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 12.5g, typ.
Environment Specifications	
Operating Temperature	-40 to +85℃ (ambient)
Maximum Case Temperature	100℃
Storage Temperature	-40 to +125℃
Cooling	Free Air Convection
RoHS Conform	Soldering 260℃, max. (1.5mm from case 10s.)

Selection Guide
Single/Dual Output

Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF)[2]
SINGLE OUTPUT							
P8SG-053R3ELF	5	50	517	3.3	400	51	220
P8SG-0505ELF	5	50	454	5	300	66	220
P8SG-0509ELF	5	50	468	9	167	64	220
P8SG-0512ELF	5	50	441	12	125	68	220
P8SG-0515ELF	5	50	441	15	100	68	220
P8SG-0524ELF	5	50	461	24	62	65	220
P8SG-123R3ELF	12	40	203	3.3	400	54	220
P8SG-1205ELF	12	40	189	5	300	66	220
P8SG-1209ELF	12	40	186	9	167	67	220
P8SG-1212ELF	12	40	178	12	125	70	220
P8SG-1215ELF	12	40	195	15	100	64	220
P8SG-1224ELF	12	40	201	24	62	62	220
P8SG-243R3ELF	24	35	103	3.3	400	53	220
P8SG-2405ELF	24	35	100	5	300	62	220
P8SG-2409ELF	24	35	97	9	167	64	220
P8SG-2412ELF	24	35	93	12	125	67	220
P8SG-2415ELF	24	35	94	15	100	66	220
P8SG-2424ELF	24	35	94	24	62	66	220
DUAL OUTPUT							
P8SG-053R3ZLF	5	50	440	± 3.3	± 200	60	± 1000
P8SG-0505ZLF	5	50	461	± 5	± 150	65	± 1000
P8SG-0509ZLF	5	50	447	± 9	± 83	67	± 470
P8SG-0512ZLF	5	50	428	± 12	± 63	70	± 470
P8SG-0515ZLF	5	50	447	± 15	± 50	67	± 470
P8SG-0524ZLF	5	50	454	± 24	± 31	66	± 220
P8SG-123R3ZLF	12	35	171	± 3.3	± 200	64	± 1000
P8SG-1205ZLF	12	35	183	± 5	± 150	68	± 1000
P8SG-1209ZLF	12	35	178	± 9	± 83	70	± 470
P8SG-1212ZLF	12	35	166	± 12	± 63	75	± 470
P8SG-1215ZLF	12	35	173	± 15	± 50	72	± 470
P8SG-1224ZLF	12	35	176	± 24	± 31	71	± 220
P8SG-243R3ZLF	24	15	83	± 3.3	± 200	66	± 1000
P8SG-2405ZLF	24	15	89	± 5	± 150	70	± 1000
P8SG-2409ZLF	24	15	85	± 9	± 83	73	± 470
P8SG-2412ZLF	24	15	80	± 12	± 63	78	± 470
P8SG-2415ZLF	24	15	83	± 15	± 50	75	± 470
P8SG-2424ZLF	24	15	84	± 24	± 31	74	± 220

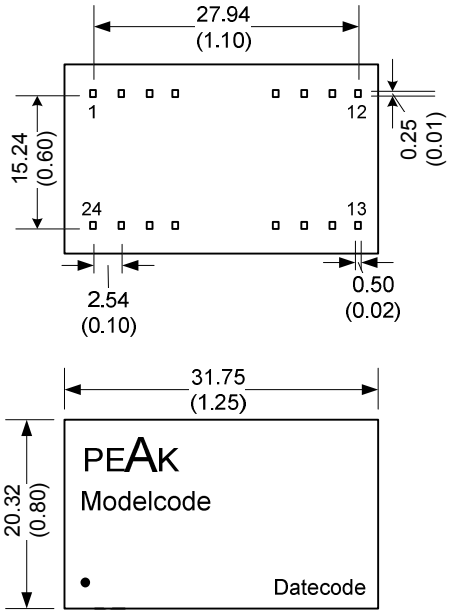
If you need other specifications, please enquire.

***OPTIONS:**

H30 = 3000 VDC ISOLATION
H40 = 4000 VDC ISOLATION
H52 = 5200 VDC ISOLATION
H60 = 6000 VDC ISOLATION

For other I/O Isolation please see table on the left hand side and add "**Hxx**" before LF
(P8SG-2412E**H60**LF for **6KV)**

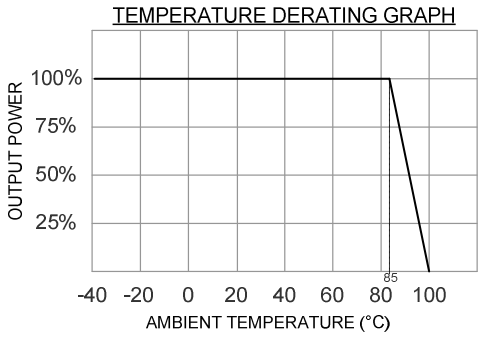
Package / Pinning / Derating



All dimensions are typical in millimeters (inches).
- Pin diameter: 0.5 +/-0.05 (0.02 +/-0.002)
- Pin pitch tolerance: +/-0.35 (+/-0.014)
- Case tolerance +/-0.5 (+/-0.02)

Specification may change without notice.

DIP24 – PLASTIC CASE



PIN CONNECTIONS				
#	SINGLE	DUAL	SINGLE **≥3KV**	DUAL **≥3KV**
1	+Vin	+Vin	+Vin	+Vin
2	N.C.	- Vout	+Vin	+Vin
3	N.C.	Common	Omitted	Omitted
10	- Vout	Common	Omitted	Common
11	+Vout	+Vout	Omitted	Common
12	- Vin	- Vin	- Vout	Omitted
13	- Vin	- Vin	+Vout	- Vout
14	+Vout	+Vout	Omitted	Omitted
15	- Vout	Common	Omitted	+ Vout
22	N.C.	Common	Omitted	Omitted
23	N.C.	- Vout	- Vin	- Vin
24	+Vin	+Vin	- Vin	- Vin

App Notes:

[1] = Measured Input reflected ripple current with a simulated source inductance of 12uH.
[2] = Tested by minimal Vin and constant resistive load.